

REMARKS

Claims 1, 3-17, and 26 are pending and under consideration. Claim 1 has been amended. Claims 18, 20, 22, and 25 are canceled without prejudice or disclaimer. Support for the amendments to the claims may be found in the claims as originally filed. Reconsideration is requested based on the foregoing amendment and the following remarks.

Response to Arguments:

The Applicants appreciate the consideration given to their arguments. The Applicants, however, are disappointed that their arguments were not found to be persuasive.

The Office Action asserts in section 10, in the last paragraph at page 9 and the first paragraph at page 10, that:

The Applicant argues that neither Bigo nor Miyamoto teaches "maximizing a product of a transmission distance and a transmission capacity of the system" as recited in claim 1. However, the statement is considered as an objective, or intended purpose of the filters and does not carry patentable weight.

This is submitted to be incorrect. According to MPEP 2143.03, all claim limitations must be taught our suggested. As provided therein:

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Since neither Bigo nor Miyamoto teaches "maximizing a product of a transmission distance and a transmission capacity of the system" as recited in, for example, claim 1, the Office Action has established no *prima facie* case of obviousness of claim 1.

Nevertheless, in the interest of compact prosecution only, and not for any reason of patentability, claim 1 has been amended further to recite "said filters are configured to yield filtered signal lights having respective bit rates and frequency spacing to approach a spectrum efficiency maximizing a product of a transmission distance and a transmission capacity of the system."

Further reconsideration is thus requested.

Claim Rejections - 35 U.S.C. § 103:

Claims 1 and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bigo et al., "Improving Spectral Efficiency by Ultra-Narrow Optical Filtering to Achieve MultiTerabit/s Capacities", OFC 2002, 17-22 March 2002 (hereinafter "Bigo") in view of U.S. Patent No. 6,865,348 to Miyamoto et al. (hereinafter "Miyamoto") and Ramaswami et al., "Optical Networks, A Practical Perspective", by Ramaswami et al., Morgan Kaufmann 1998, pp. 177-180 (hereinafter "Ramaswami-1"). The rejection is traversed to the extent it might apply to the claims as amended. Reconsideration is earnestly solicited.

Claim 1 recites:

Said filters are configured to yield filtered signal lights having respective bit rates and frequency spacing to approach a spectrum efficiency maximizing a product of a transmission distance and a transmission capacity of the system.

Neither Bigo, Miyamoto, nor Ramaswami-1 teaches, discloses, or suggests "filters are configured to yield filtered signal lights having respective bit rates and frequency spacing to approach a spectrum efficiency maximizing a product of a transmission distance and a transmission capacity of the system," as recited in claim 1. The Office Action, in fact, does not even assert that Bigo *does* show "maximizing a product of a transmission distance and a transmission capacity of the system," as recited in claim 1.

Neither Miyamoto nor Ramaswami-1 have filters "configured to yield filtered signal lights having respective bit rates and frequency spacing to approach a spectrum efficiency maximizing a product of a transmission distance and a transmission capacity of the system" either, and thus cannot make up for the deficiencies of Bigo with respect to claim 1. Thus, even if Bigo, Miyamoto, and Ramaswami-1 were combined as proposed in the Office Action, claim 1 would not result. Claim 1 is submitted to be allowable. Withdrawal of the rejection of claim 1 is earnestly solicited.

Claim 17:

Claim 17 recites:

Setting a bit rate and frequency spacing of the signal lights are set so as to approach a spectrum efficiency at which a product of a transmission distance and a transmission capacity becomes maximum.

Neither Bigo, Miyamoto, nor Ramaswami-1 teaches, discloses, or suggests "setting a bit

rate and frequency spacing of the signal lights are set so as to approach a spectrum efficiency at which a product of a transmission distance and a transmission capacity becomes maximum," as discussed above with respect to the rejection of claim 1. Thus, even if Bigo, Miyamoto, and Ramaswami-1 were combined as proposed in the Office Action, claim 17 would not result. Claim 17 is submitted to be allowable, for at least those reasons discussed above with respect to the rejection of claim 1. Withdrawal of the rejection of claim 17 is earnestly solicited.

Claims 3-12:

Claims 3-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bigo, Miyamoto, and Ramaswami-1 in view of U.S. Patent No. 6,496,297 to Frankel et al. (hereinafter "Frankel"). The rejection is traversed to the extent it might apply to the claims as amended. Reconsideration is earnestly solicited.

Claims 3-12 depend from claim 1 and add additional distinguishing elements. Neither Bigo, Miyamoto nor Ramaswami-1 teaches, discloses, or suggests filters "configured to yield filtered signal lights having respective bit rates and frequency spacing to approach a spectrum efficiency maximizing a product of a transmission distance and a transmission capacity of the system," as discussed above with respect to the rejection of claim 1. Frankel does not either, and thus cannot make up for the deficiencies of either Bigo, Miyamoto, or Ramaswami-1 with respect to any of claims 3-12. Thus, even if Bigo, Miyamoto, Ramaswami-1 and Frankel were combined as proposed in the Office Action, claims 3-12 would not result. Claims 3-12 are thus also submitted to be allowable. Withdrawal of the rejection of claims 3-12 is earnestly solicited.

Claim 13:

Claim 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bigo, Miyamoto, and Ramaswami-1 in view of Ramaswami et al., "Optical Networks", second Edition by Ramaswami et al., Academic Press, 2002, Published 12 October 2001 pp. 139-143 (hereinafter "Ramaswami-2"). The rejection is traversed. Reconsideration is earnestly solicited.

Claim 13 depends from claim 1 and adds additional distinguishing elements. Neither Bigo, Miyamoto, nor Ramaswami-1 teaches, discloses, or suggests filters "configured to yield filtered signal lights having respective bit rates and frequency spacing to approach a spectrum efficiency maximizing a product of a transmission distance and a transmission capacity of the system," as discussed above with respect to the rejection of claim 1. Ramaswami-2 does not either, and thus cannot make up for the deficiencies of either Bigo, Miyamoto, or Ramaswami-1

with respect to claim 13. Thus, even if Bigo, Miyamoto, Ramaswami-1 and Ramaswami-2 were combined as proposed in the Office Action, claim 13 would not result. Claim 13 is thus also submitted to be allowable. Withdrawal of the rejection of claim 13 is earnestly solicited.

Claim 14:

Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bigo, Miyamoto, Ramaswami-1 and Frankel in view of Ramaswami-2. The rejection is traversed to the extent it might apply to the claims as amended. Reconsideration is earnestly solicited.

Claim 14 depends from claim 1 and adds additional distinguishing elements. Neither Bigo, Miyamoto, Ramaswami-1, Frankel, nor Ramaswami-2 teaches, discloses, or suggests filters "configured to yield filtered signal lights having respective bit rates and frequency spacing to approach a spectrum efficiency maximizing a product of a transmission distance and a transmission capacity of the system," as discussed above with respect to the rejection of claims 1 and 13. Thus, even if Bigo, Miyamoto, Ramaswami-1, Frankel, and Ramaswami-2 were combined as proposed in the Office Action, claim 14 would not result. Claim 14 is thus also submitted to be allowable. Withdrawal of the rejection of claim 14 is earnestly solicited.

Claim 15:

Claim 15 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bigo, Miyamoto, Ramaswami-1, and Frankel in view of U.S. Patent Application Publication No. 2002/0025111 to Koshi et al. (hereinafter "Koshi"). The rejection is traversed. Reconsideration is earnestly solicited.

Claim 15 depends from claim 1 and adds additional distinguishing elements. Neither Bigo, Miyamoto, Ramaswami-1, nor Frankel teaches, discloses, or suggests filters "configured to yield filtered signal lights having respective bit rates and frequency spacing to approach a spectrum efficiency maximizing a product of a transmission distance and a transmission capacity of the system," as discussed above with respect to the rejection of claim 1. Koshi does not either, and thus cannot make up for the deficiencies of either Bigo, Miyamoto, Ramaswami-1, or Frankel with respect to claim 15. Thus, even if Bigo, Miyamoto, Ramaswami-1, Frankel, and Koshi were combined as proposed in the Office Action, claim 15 would not result. Claim 15 is thus also submitted to be allowable. Withdrawal of the rejection of claim 15 is earnestly solicited.

Claims 16 and 26:

Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bigo, Miyamoto, and Ramaswami-1 in view of U.S. Patent No. 6,690,886 to Guy (hereinafter "Guy"). The rejection is traversed. Reconsideration is earnestly solicited.

Claim 16 depends from claim 1 and adds additional distinguishing elements. Neither Bigo, Miyamoto, nor Ramaswami-1 teaches, discloses, or suggests filters "configured to yield filtered signal lights having respective bit rates and frequency spacing to approach a spectrum efficiency maximizing a product of a transmission distance and a transmission capacity of the system," as discussed above with respect to the rejection of claim 1. Guy does not either, and thus cannot make up for the deficiencies of either Bigo, Miyamoto, or Ramaswami-1 with respect to claim 16. Thus, even if Bigo, Miyamoto, Ramaswami-1 and Guy were combined as proposed in the Office Action, claim 16 would not result. Claim 16 is thus also submitted to be allowable. Withdrawal of the rejection of claim 16 is earnestly solicited.

Claim 26:

Claim 26 recites:

Maximizing a product of a transmission distance and a transmission capacity by setting a bit rate and frequency spacing of the signal lights.

Neither Bigo, Miyamoto, Ramaswami-1 nor Guy teaches, discloses, or suggests filters "configured to yield filtered signal lights having respective bit rates and frequency spacing to approach a spectrum efficiency maximizing a product of a transmission distance and a transmission capacity of the system," as discussed above with respect to the rejection of claims 1 and 16.

Thus, even if Bigo, Miyamoto, Ramaswami-1 and Guy were combined as proposed in the Office Action, claim 26 would not result. Claim 26 is thus submitted to be allowable. Withdrawal of the rejection of claim 26 is earnestly solicited.

Conclusion:

Accordingly, in view of the reasons given above, it is submitted that all of claims 1, 3-17, and 26 are allowable over the cited references. Allowance of all claims 1, 3-17, and 26 and of this entire application is therefore respectfully requested.

Finally, if there are any formal matters remaining after this response, the Examiner is

Application Serial No. 10/606,935
Amendment filed July 1, 2009
Reply to Office Action mailed March 3, 2009

invited to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing this Amendment, please charge them to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: July 1, 2009

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